A briefe
TREATISE
for the meaſuring of Glaſſe, Board, Timber, or Stone, ſquare or round.

Being performed only by ſimple Addition and Subſtraction, and that in whole Numbers, without any Multiplication, or Diviſion at all.

By *John Speidell* Mathematitian, in Queenes-ſtreet, where you may have of theſe Books at all times.

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UMI

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This I have written in briefe to helpe all ſuch as can but only Adde and Subſtract in whole numbers, which if any cannot doe, if they pleaſe to repaire to my houſe in Queen-ſtreet, I will teach them ſo much Arithmetick in halfe an houre.

And for all ſuch as deſire to be more then ordinarily inſtructed in the Mathematicks; Let them repaire unto mē, ānd I ſhal (God willing) give them ſuch ſatisfaction in all the rules of Arithmetick, both in whole Numbers and Fractions, with the extractions of roots, the rule of Coſſe or Algebra, with ſuch extraordinary briefe rules for exchange, intereſt, valueing of Lands, Leaſes, Rents, Annuities, and Purchaſes, and with a briefer way for caſting up of Tower bills for gold or ſilver, then hath hitherto been taught by any. As alſo by a new invention of mine to teach women or children above 10 yeares of age, to caſt up any ordinary queſtion of the rule of 3. or practice, in whole numbers, and with Fractions in a few houres.

There alſo may any be inſtructed in Geometry and Aſtronomy, by practice and demonſtration, with the uſe of ſeverall inſtruments for ſurveying of Lands, and plotting the ſame ſundry wayes, and taking of heights and diſtances by ſeverall inſtruments, with the uſe of both the Globes, the projection of the Sphere in plaine by ſcale and compaſſe, and the doctrine of right lyned and ſphericall Triangles, with the application thereof in dialling, navigation and fortification, after a briefer way then is extant by any writer of theſe times, with the uſe of the Ephemerides, and other ſecret inventions to be taught in private.

There alſo may you have particular rules and ſcales for meaſuring of glaſſe, board, wainſcot, plaſtering, tyling, brickworke, ſtone, or timber, ſquare or round, and for reducing one figure into another, and cutting of any part or parts thereof ſundry waies, for valuing of rents, leaſes, annuities, and purchaſes, and forintreſt, with rebates, after any rate *per centum*, to be done onely by ſcale and compaſſe, alſo gauging rods for all kinde of Caske great or ſmall, and preſently taught at firſt ſight, for the helpe of ſuch as are not ſeene in Arithmetick at all.

There alſo may you have of the beſt Mathematicall paper, &c.

UMI

To meaſure glaſſe or board.

THis is a ſeverall wayes to be done: Firſt, by having only the breadth of your glaſſe or board, and thereby to finde how much in length ſhall make a ſuperficiall or ſquare foot, or having the length and breadth to finde how much that whole pane of glaſſe, or that whole board containeth.

Example.

Let a board or a pane of glaſſe be broad 9. inches, and it is required to finde how much in length ſhall make a ſquare foot; ſubtract ever from, 33625. the number belonging to the breadth of your board or glaſſe, and the remainder being lookt, ſheweth how much in length ſhall make a ſquare foot.

Example.

The breadth being 9. inches, the number thereunto belonging is, 15563. which taken from, 33625. leaveth, 18062. which being lookt out againſt it ſtands, 1. fo. and 4. inches, and ſo much in length ſhall make a ſquare or ſuperficiall foot: And after the ſame manner, if a glaſſe or board be 8. inches broad, there will be found 1. foot and 6. inches in length to make a foot:

And if your glaſſe or board be broad 13 ½ inches there ſhall be found 10 ½ inches in length to make a foot.

The ſecond way.

Suppoſe a pane of glaſſe to be broad 16. inches, and long 2 foot and 6. inches, and it is required to finde how many ſquare foot therein is contained.

Take the numbers belonging to both the length and breadth, and adde them together, and from that addition ſubſtract ever the number belonging to 1. foot, and the remaynder being lookt ſheweth how many ſquare foot that whole pane containeth.

Example.

Againſt.	2 fo. 6. is.	20792
Againſt	1. 4. is .	18062
	together.	38854
Againſt.	1. fo. is .	16812
	reſt . .	22042

to

to which anſwers 3. fo. 4. in. and ſo much is contained in that whole pane of glaſſe required.

Againe, ſuppoſe a board to be long 18. foot, and broad 16. inches, and it is required to finde how many ſquare foot that whole board containeth.

Againſt. 18. fo. is.	29365
Againſt. 16. inches.	18062
together.	47427
Againſt, 1. fo. is.	16812
reſt. .	30615

to which anſwers 24. foot to be therein contained.

And after the ſame manner, if a board be broad 14. $\frac{1}{4}$. inches, and long 17. fo. 5. $\frac{1}{2}$. inches, then ſhall be therein contained 20, fo. 8. $\frac{3}{4}$. inches.

To meaſure Timber or Stone.

This is alſo to be done 2. wayes.

Firſt, having the breadth and depth of your Timber to finde how much in length ſhall make a ſollid or cubicall foot ; or having the length, breadth, and depth, to finde how many ſollide foot the whole piece of Timber containeth.

Foraſmuch as almoſt no Timber is ſo broad and deepe above as below, therefore take both the breadth and thickneſſe about the middle of the peece, and ſuppoſe you finde it thereabouts to be 15. inches broad, and 11 deepe, and it is required to finde howmuch in length ſhall make a ſollide foot.

Adde the Numbers belonging to the breadth and depth together, and ſubſtract that addition ever frō 50437, and the remaynder looke ſheweth how much in length ſhall make a ſollid foot.

Againſt. 15. inches is.	17782
Againſt. 11. ſtands,	16435
together.	34217
Which ſubſtract from.	50437
ſo reſt.	16220

to which anſwers 10 $\frac{1}{2}$. inches, and ſo much in length ſhall make a ſollid foot required.

And after the ſame manner, if a peece be broad 18. inches, and deepe 16, there is found that 6. inches in length ſhall make a ſollid foot.

And

And being broad 9 $\frac{1}{4}$. inches, and deepe 7. $\frac{1}{4}$. by proceeding after the ſame manner there ſhall be found 24. inches in length to make a ſollid foot, and not $\frac{1}{2}$. quarter more.

The other way by having the length, breadth, and thickneſſe to finde how much the whole piece containeth.

Let the breadth and depth about the midle be 16. $\frac{1}{2}$ and 10. $\frac{3}{4}$. inches, and the whole length 17. fo. 8. $\frac{1}{4}$. inches, and it is required to finde how many ſolid feet that whole piece containeth.

Adde the Numbers belonging to the length, breadth, and depth together, and from that Addition ſubſtract ever this Number 33625. and the remainder lookt, ſheweth how many foot that whole peece containeth.

The number belonging to 17. fo. 8. in. $\frac{1}{4}$. the length is.	29289
To the breadth. . .	18195
To the depth. . . .	16335
together. .	63819
Subſtract ever	33625
ſo reſt. : :	30194

to which anſwers 21. fo. 9. in. $\frac{1}{2}$. to be therein contained.

For Stone.

Suppoſe a Stone to be long 5 fo. 7. in. $\frac{1}{2}$. broad 2. fo. 1. $\frac{1}{4}$. in. and deep 1. fo. 3. in. $\frac{1}{2}$. and it is required to finde how many ſolid feet that ſtone containeth.

To the length is. . .	24314
To the breadth . . .	20043
To the depth . . .	17924
together. .	62281
Subſtract . .	33625
ſo reſt . .	28656

to which anſwers 15. fo. 3. in. $\frac{1}{2}$. to be therein contained.

And after the ſame manner the length being 4. fo. the breadth 18. inches, and the depth 16. there is found that whole ſtone to containe juſt 8. ſollid foot.

To meaſure round Timber called girt meaſure.

This is alſo to be done 2 wayes, either by finding how much in length ſhall make a ſollid foot, or to finde how many ſollid foot the whole tree containeth; Gird your tree about neare the middle thereof, and ſuppoſe you finde it to be 35. inches about, and you deſire to finde how much in length ſhall make a ſollid foot.

Take the number belonging to the circomference, and double it ever, which double ſubſtract from 61431. alwayes the remaynder being lookt, ſheweth how much in length ſhall make a ſollid foot, which by ſo working is found to be 1. fo. 5. $\frac{1}{4}$. inches.

And after the ſame manner, a tree being 2 fo. 7. inches about, there ſhall be found 1. fo. 10 $\frac{1}{2}$. inches in length to make a ſollid foot.

To finde how much the whole Tree containeth.

Suppoſe your tree neere the middle to be about 48. inches, and long 14. fo. and it is required to finde how many ſollid foot that whole tree containeth.

Set downe alwayes twice the number belonging to the circumference, and under it the number belonging to the length, and under that ever this number 55381. then adde all together, and caſt away alwaies the firſt figure thereof next your left hand, the reſt lookt ſheweth how many ſollid fo. the whole tree containeth.

Example.

It is 4. fo. about, and the number thereunto
belonging is. 21833
which I ſet down again. . . 21833
to 14 fo. the length belongs 28274
and ever this number. . . 55381
fo. ~~1~~ 19,21

to which anſwers 17 fo. 9. $\frac{3}{4}$. inches, and ſo many ſollid foot that whole tree containeth, in like manner worke for all other.

The uſe of a ſcale of Fractions, invented by John Speidell, *Mathematitian, in Queen ſtreet.*

THE ſcale containeth 120. equall partes, being numbred on the left hand by 4. 8. 12. to 120. and on the right hand by 1. 2. 3. to 20. whoſe uſes follow.

Addition in Fractions.

Let it be required to adde $\frac{1}{5}$. and $\frac{1}{6}$. together: Take from the bottome the diſtance to $\frac{1}{5}$. and ſetting one foot in $\frac{1}{6}$. turne the other foot ever upwards, and it endeth now in $\frac{11}{30}$. or you may take $\frac{1}{6}$. firſt, and then ſetting one foot in $\frac{1}{5}$. turne the other ever upwards, and it endeth alſo in $\frac{11}{30}$. and ſo is found that $\frac{1}{5}$. and $\frac{1}{6}$. being added together doe make $\frac{11}{30}$. of the whole.

In like manner $\frac{1}{3}$. and $\frac{1}{4}$. of any thing being added together doe make $\frac{7}{12}$. of the ſame thing, be it of an ell, a yard, a ſhilling, or a pound, &c.

Againe, let it be required to adde $\frac{2}{3}$. and $\frac{3}{4}$. together; if now you take $\frac{2}{3}$. from the bottom, and with that diſtance ſetting one foot in $\frac{3}{4}$. and turne the other foot upwards, as before taught, you ſhall finde it to goe beyond your ſcale.

Therefore take only the diſtance between $\frac{2}{3}$, or $\frac{3}{4}$. one of your Fractions given, and the top 120. and with that diſtance ſetting 1. foot in the other Fraction, turne downwards, and to what it ſheweth adde ever 1. whole unite, as if you take the diſtance between $\frac{3}{4}$. and the top of your ſcale 120. and with the ſame diſtance ſetting one foot in $\frac{2}{3}$. the other Fraction, turne downwards, and it endeth now in $\frac{5}{12}$. to which adde 1. whole unite, ſo is it

1 $\frac{5}{12}$. and ſo is found that $\frac{2}{3}$. and $\frac{3}{4}$. being added together doe make 1 $\frac{5}{12}$. the thing required.

And after the ſame manner $\frac{4}{5}$. and $\frac{5}{6}$. being added together doe make 1 $\frac{19}{30}$ and $\frac{7}{8}$. and $\frac{2}{3}$. being added together doe make 1 $\frac{13}{24}$. parts, &c.

Subſtraction in Fractions.

Let it be required to take $\frac{2}{5}$. from $\frac{1}{2}$. and to finde what part of the whole is left.

Take only with your compaſſes the difference between $\frac{2}{5}$. and $\frac{1}{2}$. your 2. Fraction given, and that diſtance applyed from the bottome, ſheweth $\frac{1}{10}$. and ſo is found that $\frac{2}{5}$. of any thing being taken from the $\frac{1}{2}$. of the ſame thing, there ſhall remaine $\frac{1}{10}$. of the ſame thing.

And in like manner, if you take $\frac{1}{6}$. from $\frac{4}{5}$. there ſhall remaine $\frac{19}{30}$. and $\frac{2}{3}$. being taken from $\frac{7}{8}$. there ſhall remaine $\frac{5}{24}$. and $\frac{1}{5}$. from $\frac{5}{6}$. leaveth $\frac{19}{30}$. &c.

Multiplication in Fractions.

Multiplication and Fraction of Fractions, is one and the ſame thing; for it is all one queſtion to ſay multiply $\frac{1}{2}$. by $\frac{1}{5}$. or what is the $\frac{1}{2}$. of $\frac{1}{5}$. or the $\frac{1}{5}$ of $\frac{1}{2}$? this is all one and the ſame demand, to doe this by your ſcale of Fractions.

Looke out $\frac{1}{5}$. on your ſcale, and againſt it on your left hand ſtands 72. whereof take $\frac{1}{2}$. that is 36. which looke alſo amongſt the Numbers on your left hand, and by it, ſtands $\frac{1}{10}$. and ſo is found that $\frac{1}{5}$. being multiplyed by $\frac{1}{2}$. or the $\frac{1}{2}$. of $\frac{1}{5}$. is $\frac{1}{10}$. of the whole unite.

And after the ſame manner, $\frac{3}{4}$. of $\frac{2}{9}$. is $\frac{1}{6}$. of the whole, for againſt $\frac{2}{9}$. ſtands 80. whereof $\frac{3}{4}$. is 60. againſt which 60. ſtands $\frac{1}{6}$.

In like manner, if $\frac{4}{5}$. be given to be multiplyed by $\frac{3}{4}$.
the

the product will be found to be $\frac{8}{15}$. and $\frac{7}{8}$. being given to be multiplyed by $\frac{2}{5}$. the product will be $\frac{7}{20}$. &c.

Diviſion in Fractions.

Let it be required to divide $\frac{3}{5}$. by $\frac{1}{2}$.

Against $\frac{3}{5}$. ſtands 72. and against $\frac{1}{2}$. ſtands 60. now ſo often as 60 is in 72. which is once, and $\frac{1}{5}$. ſo often is $\frac{1}{2}$. in $\frac{3}{5}$. &c.

Againe, divide $\frac{4}{5}$. by $\frac{1}{3}$. against $\frac{4}{5}$. ſtands 96. and against $\frac{1}{3}$. ſtands 40. now ſo often as 40. is in 96. which is two times, and $\frac{2}{5}$. ſo often is $\frac{1}{3}$. in $\frac{4}{5}$. &c.

Againe, divide $\frac{3}{5}$. by $\frac{5}{6}$. against $\frac{3}{5}$. ſtands 72. and against $\frac{5}{6}$. ſtands 100. Now 100. cannot be had in 72. ſet it therefor thus, $\frac{72}{100}$. parts, or being abreviated by 4. it is $\frac{18}{25}$. parts, and ſo is found that $\frac{3}{5}$. being divided by $\frac{5}{6}$. the Quotient is $\frac{18}{25}$. &c.

After the ſame manner $\frac{2}{3}$. being given to be divided by $\frac{3}{4}$. the Quotient will be $\frac{80}{90}$. or abreviated by 10. it will be $\frac{8}{9}$. &c.

To finde the value of a Fraction in ſhillings and pence.

Let it be required to finde how many ſhillings and pence the $\frac{5}{8}$ of a pound is: Looke out $\frac{5}{8}$. on your ſcale, and among the Numbers on your right hand ſtands 12. below the $\frac{5}{8}$. and 13. above it, that is to ſay the $\frac{5}{8}$. of a ~~pound is more then~~ 12 ſhillings, and leſſe then 13 ſhillings; now right against 12 ſhillings ſtands $\frac{3}{5}$. count therefore in the ſmall parts upwards, from $\frac{3}{5}$. to $\frac{5}{8}$. how many of them it is, and you find 3. which are two pences, ſo the 3. make 6 pence, which put to the 12 ſhillings, ſo is it 12 ſhillings and 6 pence, and ſo is found that the $\frac{5}{8}$. of 20 ſhillings, or a pound, is 12 ſhillings and 6 pence.

Againe, let be required to finde how much the $\frac{2}{3}$. of a pound is.

Looke $\frac{2}{3}$. and the Number next under it on your right hand is 13. which ſtands againſt $\frac{13}{20}$. then count the ſmall parts from thence upwards to $\frac{2}{3}$. which are 2. that is 2. two pences, which is 4 pence, ſo is found that $\frac{2}{3}$. of a l. is 13. s. 4. d. and after the ſame manner $\frac{5}{6}$. of a pound, is found to bee 16. s. 8. d. and $\frac{7}{8}$. to be 17. s. 6. d. &c.

FINIS.

	5	4	4	4	4	4	3	3	3	3	
	29827	30039	30241	30434	30618	30795	30966	31129	31287	31440	0
	29832	30043	30245	30438	30622	30799	30969	31133	31290	31443	
	29836	30048	30249	30441	30626	30803	30973	31136	31294	31446	
1	29841	30052	30253	30445	30630	30806	30976	31139	31297	31449	
	29845	30056	30257	30449	30633	30810	30980	31143	31300	31452	
	29850	30060	30261	30453	30637	30813	30983	31146	31303	31455	
	29854	30065	30265	30457	30641	30817	30986	31149	31307	31458	
2	29859	30069	30269	30461	30645	30821	30990	31153	31310	31461	
	29863	30073	30273	30465	30648	30824	30993	31156	31313	31464	
	29868	30077	30278	30469	30652	30828	30997	31159	31316	31467	
	29872	30082	30282	30473	30656	30831	31000	31163	31319	31471	
3	29877	30086	30286	30477	30660	30835	31004	31166	31323	31474	1
	29881	30090	30290	30481	30663	30839	31007	31169	31326	31477	
	29886	30095	30294	30484	30667	30842	31011	31173	31329	31480	
	29890	30099	30298	30488	30671	30846	31014	31176	31332	31483	
4	29894	30103	30302	30492	30674	30849	31017	31179	31335	31486	
	29899	30107	30306	30496	30678	30853	31021	31183	31339	31489	
	29903	30111	30310	30500	30682	30856	31024	31186	31342	31492	
	29908	30116	30314	30504	30686	30860	31028	31189	31345	31495	
5	29912	30120	30318	30508	30689	30864	31031	31193	31348	31498	
	29917	30124	30322	30512	30693	30867	31035	31196	31351	31501	
	29921	30128	30326	30515	30697	30871	31038	31199	31355	31504	
	29926	30133	30330	30519	30700	30874	31041	31202	31358	31508	
6	29930	30137	30334	30523	30704	30878	31045	31206	31361	31511	2
	29934	30141	30338	30527	30708	30881	31048	31209	31364	31514	
	29939	30145	30342	30531	30711	30885	31052	31212	31367	31517	
	29943	30149	30346	30535	30715	30888	31055	31216	31370	31520	
7	29948	30154	30350	30538	30719	30892	31059	31219	31374	31523	
	29952	30158	30354	30542	30722	30896	31062	31222	31377	31526	
	29956	30162	30358	30546	30726	30899	31065	31225	31380	31529	
	29961	30166	30362	30550	30730	30903	31069	31229	31383	31532	
8	29965	30170	30366	30554	30734	30906	31072	31232	31386	31535	
	29969	30175	30370	30558	30737	30910	31075	31235	31389	31538	
	29974	30179	30374	30561	30741	30913	31079	31239	31392	31541	
	29978	30183	30378	30565	30745	30917	31082	31242	31396	31544	
9	29983	30187	30382	30569	30748	30920	31086	31245	31399	31547	3
	29987	30191	30386	30573	30752	30924	31089	31248	31402	31550	
	29991	30195	30390	30577	30755	30927	31092	31252	31405	31553	
	29996	30199	30394	30580	30759	30931	31096	31255	31408	31556	
10	30000	30204	30398	30584	30763	30934	31099	31258	31411	31559	
	30004	30208	30402	30588	30766	30938	31103	31261	31414	31562	
	30009	30212	30406	30592	30770	30941	31106	31265	31418	31565	
	30013	30216	30410	30596	30774	30945	31109	31268	31421	31569	
11	30017	30220	30414	30599	30777	30948	31113	31271	31424	31572	
	30022	30224	30418	30603	30781	30952	31116	31274	31427	31575	
	30026	30228	30422	30607	30785	30955	31119	31278	31430	31578	
	30030	30233	30426	30611	30788	30959	31123	31281	31433	31581	
	30035	30237	30430	30615	30792	30962	31126	31284	31436	31584	
	21	22	23	24	25	26	27	28	29	30	

	3	3	3	3	3	3	3	2	2	2	
	31587	31729	31867	32000	32130	32256	32378	32497	32613	32725	
	31590	31732	31870	32003	32133	32258	32380	32499	32615	32728	
	31593	31735	31872	32006	32135	32261	32383	32502	32617	32730	
1	31596	31738	31875	32009	32138	32263	32385	32504	32620	32732	
	31599	31741	31878	32011	32140	32266	32388	32507	32622	32735	
	31602	31744	31881	32014	32143	32269	32390	32509	32625	32737	
	31605	31746	31884	32017	32146	32271	32393	32512	32627	32739	
2	31608	31749	31886	32019	32148	32274	32395	32514	32629	32742	
	31611	31752	31889	32022	32151	32276	32398	32516	32632	32744	
	31614	31755	31892	32025	32154	32279	32400	32519	32634	32746	
	31617	31758	31895	32028	32156	32281	32403	32521	32636	32749	
3	31620	31761	31898	32030	32159	32284	32405	32524	32639	32751	1
	31623	31764	31901	32033	32162	32287	32408	32526	32641	32753	
	31626	31767	31903	32036	32164	32289	32410	32529	32643	32755	
	31629	31770	31906	32038	32167	32292	32413	32531	32646	32758	
4	31632	31772	31909	32041	32170	32294	32415	32533	32648	32760	
	31635	31775	31912	32044	32172	32297	32418	32536	32651	32762	
	31638	31778	31915	32047	32175	32299	32420	32538	32653	32765	
	31641	31781	31917	32049	32177	32302	32423	32541	32655	32767	
5	31644	31784	31920	32052	32180	32304	32425	32543	32658	32769	
	31647	31787	31923	32055	32183	32307	32428	32545	32660	32772	
	31649	31790	31926	32057	32185	32310	32430	32548	32662	32774	
	31652	31793	31928	32060	32188	32312	32433	32550	32665	32776	
6	31655	31796	31931	32063	32191	32315	32435	32553	32667	32778	2
	31658	31798	31934	32066	32193	32317	32438	32555	32669	32781	
	31661	31801	31937	32068	32196	32320	32440	32558	32672	32783	
	31664	31804	31940	32071	32198	32322	32443	32560	32674	32785	
7	31667	31807	31942	32074	32201	32325	32445	32562	32676	32788	
	31670	31810	31945	32076	32204	32327	32448	32565	32679	32790	
	31673	31813	31948	32079	32206	32330	32450	32567	32681	32792	
	31676	31816	31951	32082	32209	32333	32453	32570	32683	32794	
8	31679	31818	31953	32084	32212	32335	32455	32572	32686	32797	
	31682	31821	31956	32087	32214	32338	32458	32574	32688	32799	
	31685	31824	31959	32090	32217	32340	32460	32577	32690	32801	
	31688	31827	31962	32092	32219	32343	32463	32579	32693	32804	
9	31691	31830	31965	32095	32222	32345	32465	32582	32695	32806	3
	31694	31833	31967	32098	32225	32348	32467	32584	32697	32808	
	31697	31836	31970	32101	32227	32350	32470	32586	32700	32810	
	31700	31838	31973	32103	32230	32353	32472	32589	32702	32813	
20	31703	31841	31976	32106	32232	32355	32475	32591	32704	32815	
	31706	31844	31978	32109	32235	32358	32477	32594	32707	32817	
	31708	31847	31981	32111	32238	32360	32480	32596	32709	32819	
	31711	31850	31984	32114	32240	32363	32482	32598	32711	32822	
11	31714	31853	31987	32117	32243	32365	32485	32601	32714	32824	
	31717	31855	31989	32119	32245	32368	32487	32603	32716	32826	
	31720	31858	31992	32122	32248	32370	32490	32605	32718	32828	
	31723	31861	31995	32125	32251	32373	32492	32608	32721	32831	
	31726	31864	31998	32127	32253	32375	32494	32610	32723	32833	
	31	32	33	34	35	36	37	38	39	40	

By Iohn Speidell in Queen. ſtreete.

	00000	16902	19868	21614	22856	23820	24609	25276	25855	26365	
	03010	16990	19912	21644	22878	23838	24624	25289	25866	26375	
	04771	17076	19956	21673	22900	23856	24639	25302	25877	26385	
	06021	17160	20000	21703	22923	23874	24654	25315	25888	26395	1
	06990	17243	20043	21732	22945	23892	24669	25328	25899	26405	
	07782	17324	20086	21761	22967	23909	24683	25340	25911	26415	
	08451	17404	20128	21790	22989	23927	24698	25353	25922	26425	
	09031	17482	20170	21818	23010	23945	24713	25366	25933	26435	2
	09542	17559	20212	21847	23032	23962	24728	25378	25944	26444	
	10000	17634	20253	21875	23054	23979	24742	25391	25955	26454	
	10414	17709	20294	21903	23075	23997	24757	25403	25966	26464	
3	10792	17782	20334	21931	23096	24014	24771	25416	25977	26474	3
	11139	17853	20374	21959	23118	24031	24786	25428	25988	26484	
	11461	17924	20414	21987	23139	24048	24800	25441	25999	26493	
	11761	17993	20453	22014	23160	24065	24814	25453	26010	26503	
	12041	18062	20492	22041	23181	24082	24829	25465	26021	26513	4
	12304	18129	20531	22068	23201	24099	24843	25478	26031	26522	
	12553	18195	20569	22095	23222	24116	24857	25490	26042	26532	
	12788	18261	20607	22122	23243	24133	24871	25502	26053	26542	
	13010	18325	20645	22148	23263	24150	24886	25514	26064	26551	5
	13222	18388	20682	22175	23284	24166	24900	25527	26075	26561	
	13424	18451	20719	22201	23304	24183	24914	25539	26085	26571	
	13617	18513	20755	22227	23324	24200	24928	25551	26096	26580	
2	13802	18573	20792	22253	23345	24216	24942	25563	26107	26590	6
	13979	18633	20828	22279	23365	24232	24955	25575	26117	26599	
	14150	18692	20864	22304	23385	24249	24969	25587	26128	26609	
	14314	18751	20899	22330	23404	24265	24983	25599	26138	26618	
	14472	18808	20934	22355	23424	24281	24997	25611	26149	26628	7
	14624	18865	20969	22380	23444	24298	25011	25623	26160	26637	
	14771	18921	21004	22405	23464	24314	25024	25635	26170	26646	
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	15185	19085	21106	22480	23522	24362	25065	25670	26201	26675	
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	15911	19395	21303	22625	23636	24456	25145	25740	26263	26730	
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	16128	19494	21367	22672	23674	24487	25172	25763	26284	26749	
	16232	19542	21399	22695	23692	24502	25185	25775	26294	26758	
	16335	19590	21430	22718	23711	24518	25198	25786	26304	26767	
	16435	19638	21461	22742	23729	24533	25211	25798	26314	26776	11
	16532	19685	21492	22765	23747	24548	25224	25809	26325	26785	
	16628	19731	21523	22788	23766	24564	25237	25821	26335	26794	
	16721	19777	21553	22810	23784	24579	25250	25832	26345	26803	
	16812	19823	21584	22833	23802	24594	25263	25843	26355	26812	
	1	2	3	4	5	6	7	8	9	10	

	9	8	8	7	6	6	0	5	5	5	
	26821	27235	27612	27959	28280	28579	28859	29122	29370	29605	
	26830	27243	27619	27966	28287	28585	28865	29128	29375	29609	
	26839	27251	27627	27973	28293	28591	28871	29133	29380	29614	
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	26860	27275	27649	27993	28312	28609	28887	29149	29395	29628	
	26875	27284	27657	28000	28319	28615	28893	29154	29400	29633	
2	26884	27292	27664	28007	28325	28621	28899	29159	29405	29638	
	26893	27300	27672	28014	28331	28627	28904	29165	29410	29643	
	26902	27308	27679	28021	28338	28633	28910	29170	29415	29647	
	26911	27316	27686	28028	28344	28635	28915	29175	29420	29652	
3	26920	27324	27694	28035	28351	28645	28921	29180	29425	29657	
	26928	27332	27701	28041	28357	28651	28927	29186	29430	29601	
	26937	27340	27709	28048	28363	28657	28932	29191	29435	29666	
	26946	27348	27716	28055	28370	28663	28938	29196	29440	29671	
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	26972	27372	27738	28075	28388	28681	28954	29212	29455	29685	
	26981	27380	27745	28082	28395	28686	28960	29217	29460	29689	
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	26998	27396	27760	28095	28407	28698	28971	29227	29469	29699	
	27007	27404	27767	28102	28414	28704	28976	29232	29474	29703	
	27016	27412	27774	28109	28420	28710	28982	29238	29479	29708	
6	27024	27419	27782	28116	28426	28716	28987	29243	29484	29713	2
	27033	27427	27789	28122	28432	28722	28993	29248	29489	29717	
	27042	27435	27796	28129	28439	28727	28995	29253	29494	29722	
	27050	27443	27803	28136	28445	28733	29004	29250	29499	29727	
7	27059	27451	27810	28142	28451	28739	29009	29263	29504	29731	
	27067	27459	27818	28149	28457	28745	29015	29269	29509	29736	
	27076	27466	27825	28156	28463	28751	29020	29274	29513	29741	
	27084	27474	27832	28162	28470	28756	29025	29279	29518	29745	
8	27093	27482	27839	28169	28476	28762	29031	29284	29523	29750	
	27101	27490	27846	28176	28482	28768	29036	29289	29528	29754	
	27110	27497	27853	28182	28488	28774	29042	29294	29533	29759	
	27118	27505	27860	28189	28494	28779	29047	29299	29538	29763	
9	27126	27513	27868	28195	28500	28785	29053	29304	29542	29768	3
	27135	27520	27875	28202	28506	28791	29058	29309	29547	29773	
	27143	27528	27882	28209	28513	28797	29063	29315	29552	29777	
	27152	27536	27889	28215	28519	28802	29069	29320	29557	29782	
10	27160	27543	27896	28222	28525	28808	29074	29325	29562	29786	
	27168	27551	27903	28228	28531	28814	29079	29330	29566	29791	
	27177	27559	27910	28235	28537	28820	29085	29335	29571	29795	
	27185	27566	27917	28241	28543	28825	29090	29340	29576	29800	
11	27193	27574	27924	28248	28549	28831	29096	29345	29581	29805	
	27202	27582	27931	28254	28555	28837	29101	29350	29586	29809	
	27210	27589	27938	28261	28561	28842	29106	29355	29590	29814	
	27218	27597	27945	28267	28567	28848	29112	29360	29595	29818	
	27226	27604	27952	28274	28573	28854	29117	29365	29600	29823	
	11	12	13	14	15	16	17	18	19	20	

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